

point is more conclusive; for he states that *Adolphia* differs from *Ceanothus* and *Colubrina* in the form of its calyx and petals, its simple style, opposite leaves, and spinose branchlets, which are all floriferous below.

**ADOLPHIA**, Meisn.—*Calyx* campanulatus, brevis, ultra medium 5-fidus, laciniis acutis, intus carinatis et callosis, æstivatione valvatis. *Petala* 5, ovata, cucullata, imo unguiculata, stamina amplectentia. *Stamina* 5, inter lacinias calycinas cum petalis infra marginem disci inserta; *filamenta* complanata, erecta, apice inflexa; *antheræ* rotundatæ, cordatæ, 2-lobæ, connectivo reniformi dorsali affixæ, rima hippocrepica 2-valvatim dehiscentes, et hinc demum peltatim apertæ. *Discus* crateriformis, carnosulus, magnitudine tubi calycis, et ei arcte adnatus. *Ovarium* in fundum disci insitum, et paululo immersum, depresso-globosum, 3-loculare; *ovula* in quoque loculo solitaria, erecta. *Stylus* brevis; *stigma* obtusum, 3-lobum. *Fructus* capsularis, 3-coccus, ut in *Colletia*.

Frutex *Mexicanus*, ramosissimus, spinosus, ramulis oppositis, teretibus, sæpius spina terminatis; spinis patentibus, decussatim oppositis, rigidis; folia opposita, longe linearia, integerrima; flores solitarii, axillares, quasi fasciculati.

1. *Adolphia infesta*, Meisn.; *Benth. Pl. Hartw.* 286; *A. Gray, Pl. Wright.* 34.—*Colletia infesta*, *Brongn. Ann. Sc. Nat.* x. 366.—*Ceanothus infestus*, *H. B. K.* ii. 31.—*Colubrina infesta*, *Schl. Linn.* xv. 468;—Frutex 3–4-pedalis, ramosissimus, spinosissimus; ramis ramulisque patentibus apice spinoscentibus, junioribus retrorsum hirtellis, spinis decussatis; foliis parvis, oppositis, anguste lanceolatis, apice mucronatis, integris, crassiusculis, pilosulis, demum glabrescentibus, subtus pallidioribus, brevissime petiolatis; stipulis parvis, oppositis, gibbosis, squamiformibus, fusco-rubellis, 2-fidis, laciniis lineari-acutis, erectis, ciliatis, sinu petioliferis; floribus 2–6, in gemmam squamosam congestis.

*Hab.* Mexico.—*v. s. in herb. Hook.*, Zacatecas (Coulter, 10); El Paso, Nov. Mex. (Wright, 91).

[To be continued.]

XLI.—*Characters of new Cingalese Land-Shells collected by F. Layard, Esq., Ceylon Civil Service.* By W. H. BENSON, Esq.

*Helix Rosamonda*, B. n. s.

Testa perforata, turbinata, tenui, arcuatim rugose striata, superne lineis confertis granulatis, infra striis obsoletis spiralibus decussata, luteo-olivacea, spiram versus fuscescente; spira conica, lateribus

convexusculis, apice acuto, sutura submarginata, demum impressa; anfractibus  $6\frac{1}{2}$  convexusculis, ultimo rotundato, ad peripheriam obsolete angulato, antice non descendente, subtus convexo; apertura obliqua, rotundato-lunari, peristomate recto, acuto, margine columellari reflexiusculo albido, superne supra perforationem patente, breviter reflexo.

Diam. major 37, minor 33, axis 24 mill.; apert. longa 19, lata 20 mill. Habitat ad Pittewelle, pagi Matelle orientalis.

Its nearest Cingalese ally in form is the little solid *H. Gardneri*, Pfr. From *H. subdecussata*, which occurs at Kaloopanec, in the same district, the adult shell is at once distinguishable by its tumid non-carinate figure below, the rounded last whorl giving token only of an obsolete angle. There is also a difference in the decussate granulate spiral sculpture, and in the more convex whorls. A shell from Lagalle, which may possibly be the young of *H. Rosamonda*, has a carinate periphery; but the form is less broad in proportion than that of *H. semi-decussata*.

*Helix Cyix*, B. n. s.

Testa profunde perforata, depresso-globosa, tenuiuscula, superne oblique et regulariter confertim costulata, lineis impressis spirali-bus remotiusculis subgranulatim decussata, subtus nitida, radiatim striatula, cornea, superne saturatiore, fascia angusta fusca obsoleta, altera latiore pallida, vix conspicua, superne concurrente ad peripheriam cingulata; spira convexo-conoidea, apice obtusiusculo, sutura impressa submarginata; anfractibus  $4\frac{1}{2}$  convexusculis, sensim accrescentibus, ultimo ad peripheriam obtuse angulato, non descendente, subtus convexo; apertura obliqua rotundato-lunari, peristomate recto, tenui, infra valde arcuato obtuso, margine columellari arcuatim descendente, leviter incrassato, superne triangulatim vix expanso.

Diam. major 23, minor 20, axis 15 mill.

Habitat in pago Matelle.

It differs from the typical *H. coriaria*, Pfr., in the thinness of the shell, colouring, its regular and delicate sculpture, non-obtect narrow umbilicus, arcuate margin of the columella and base of the peristome, which is more regular in contour, and by the absence of any descent of the last whorl. It is not to be confounded with a small depressed var. of *H. coriaria* furnished with an angulate periphery, but in other respects corresponding with Pfeiffer's type, and bearing to it nearly the same relation which the pretty *H. albizonata*, Dohrn, does to *H. Gardneri*, Pfr.\*

It seems to be a characteristic of several Cingalese *Helices* to have an angulate or carinate ally differing in details of sculpture

\* *H. Cyix* is allied to *H. (Nanina) taprobanensis*, Dohrn, page 206, Malak. Blätter for 1859, received since this paper went to press, but may be known by its more globose form, less dilated aperture, &c.

and other particulars. Thus we have *H. Rosamonda* and *H. semidecussata*, and the Pfeifferian and Reeveian types of *H. Emiliana*, Pfr., as figured in Chemnitz and the 'Iconica.' Of these I have specimens before me, collected by Mr. F. Layard; and, with reference to the difference of form and sculpture, I regard them as distinct species, notwithstanding Pfeiffer's citation of Reeve's figures for his species. Not possessing the typical form of *H. coriaria*, I cannot speak decidedly in regard to the small depressed variety of that shell with an angular periphery. I subjoin the characters of Reeve's type of *H. Emiliana*.

*Helix Cingalensis*, B. n. s.

Testa perforata, conoideo-lenticulari, superne confertim et arcuatim costulata, striis confertis spiralibus granulatum decussata, lutescenti-cornea, translucente, subtus nitidula, radiatim striatula, striis obsolete spiralibus vix sculpta; spira conoidea apicem versus attenuata, demum acuta, sutura marginata; anfractibus 6 convexiusculis, lente accrescentibus, ultimo non descendente, ad peripheriam acute compresso-carinato, carina marginata, basi modice convexa; apertura obliqua, late angulato-lunari, peristomate simplici recto, margine columellari superne breviter triangulari-reflexo.

Diam. major 17, minor 15, axis 9 mill.

Syn. *Helix Emiliana* Reeve, Conch. Icon. pl. 108. f. 608 a, b.

Hab. in pago Matelle.

The radiating ribs above are arcuate, the spiral ones closely set, and about double the number in each whorl compared with the true *H. Emiliana*, from which it also differs in its very acute keel and marginate sutures. The apex is also more attenuate and acute, and the base is less convex. The difference in the two species will be evident on comparing Reeve's figure with that given in Küster's 'Chemnitz,' pl. 158. f. 33-5. Pfeiffer's typical shell was got by Mr. F. Layard at Maduranatagalle, near Ellegamme in East Matelle.

*Helix regulata*, B. n. s.

Testa vix perforata, depressa, tenui, oblique obsolete striatula, utroque spiraliter elegantissime acducto-striata, fusco-cornea, pellucida, politissima; spira depresso-conoidea, apice obtusiusculo, sutura impressa submarginata; anfractibus  $3\frac{1}{2}$  convexiusculis, celeriter accrescentibus, ultimo ad peripheriam subangulato, subtus convexiore, antice non descendente; apertura ampla, obliqua, rotundato-lunari, peristomate recto, acuto, margine columellari arcuatim descendente, superne supra perforationem reflexiusculo, marginibus remotis subconniventibus, callo tenui junctis.

Diam. major 11, minor 9, axis 6 mill.

Habitat ad Kaluganga, pagi Matelle orientalis, necnon ad Katukellekande.

Distinct in appearance from any of the known small transluc-

cent *Helices* of Ceylon, and remarkable for the beautiful spiral impressed sculpture on both sides.

*Helix miccylla*, B. n. s.

Testa imperforata, globoso-conoidea, tenui, striatula, nitidula, fusco-cornea, translucente; spira truncato-conica, sutura impressa, apice obtusissimo; anfractibus 4 convexis, ultimo globoso, antice sensim descendente; apertura lunato-rotundata, obliqua, peristomate acuto, margine dextro arcuato, columellari acuto, verticali, cum basali angulum fere rectum efformante.

Long.  $1\frac{1}{2}$ , diam. 1 mill.

Habitat ad Matelle.

Allied to *H. Orcula*, B., of North-eastern India, but smaller, destitute of the peculiar sculpture of that species, and distinguished by its very obtuse apex and by the formation of the columellar lip. It was found by Mr. F. Layard on the bark of an orange-tree near his house at Matelle.

*Achatina serena*, B. n. s.

Testa ovato-pyramidata, solidiuscula, politissima, obsolete vix striatula, fulvo-cornea, pellucida; spira elongata, subturrita, apice subito obtusato, sutura impressa, submarginata, crenulata; anfractibus  $6\frac{1}{2}$ -7 subconvexis, superne prope suturam breviter convexis, ultimo ad basin vix compresso; apertura verticali  $\frac{3}{7}$  longitudinis æquante, subtriangulari-ovata, peristomate recto obtusiusculo, margine columellari valde arcuato, albido-callosa, ad basin abrupte et oblique truncato.

Long. 20-21; diam.  $9-9\frac{1}{2}$  mill.; apert. 9 mill. longa,  $5\frac{1}{2}$  lata.

Habitat ad Akurambodie, pago Matelle septentrionali.

Distinguished from the stouter and shorter variety of *A. inornata*, Pfr., by its shorter and more obtuse spire, by the subangulate form of the whorls below the suture, and by its smoothness and polish. In the latter feature, also, it differs from *A. parabilis*, B., which it exceeds in the comparative length of the spire. As in *A. inornata*, there is a more slender variety, 21 mill. in length by 9 in diameter.

*Achatina panætha*, B. n. s.

Testa ovato-oblonga, tenui, obsolete striatula, nitidissima, pellucida, olivaceo-cornea; spira ad apicem obtusiuscula, lateribus convexiusculis, sutura valde impressa, vix marginata, crenulata; anfractibus  $6\frac{1}{2}$  convexiusculis, superne prope suturam breviter convexis, ultimo  $\frac{1}{3}$  longitudinis superante ad basin compressiusculo; apertura subverticali, subtriangulari-ovata, peristomate crassiusculo, obtuso, polito, albido, marginibus callo inconspicuo junctis, colu-

mellari arcuato, ad basin oblique truncato, intus plica obliqua spiraliter ascendente.

Long. 13; diam. 6 mill.; apert. 5 mill. longa, 3 lata.

Habitat ad Ellegamme Nalande, et aliunde in pago Matelle.

The form is less attenuate than the Nilgherry species, *Ach. Oreas*, B.; the suture also is crenulate and more impressed.

*Cyclophorus Cadiscus*, B. n. s.

Testa sublate et profunde umbilicata, convexo-depressa, tenui, confertim oblique striata, sub epidermide pallide corneo-albida; spira convexa apice obtuso, sutura profundiuscula; anfractibus 5 convexiusculis, ultimo cylindrico, antice descendente; apertura obliqua, ovato-rotundata, superne angulata, peristomate duplici, inferiore continuo, modice porrecto, exteriore adnato, ad dextram breviter expanso, margine columellari recto, simplici.

Diam. major 17, minor 15, axis 8 mill.

Habitat raro in pago Matelle orientali.

Remarkable among the depressed species of *Cyclophorus* inhabiting Ceylon for its deep umbilicus and convex spire.

*Cyclophorus Cytopoma*, B. n. s.

Testa late et profunde umbilicata, planato-depressa, subdiscoidea, vix nitidula, confertim et arcuatim rugoso-striata, fulvo-castanea, subtus pallidior apicem versus flammis pallidioribus, et infra medium anfractus ultimi fascia fusca inconspicua ornata; spira planulata, apice non prominente, sutura profunda; anfractibus  $5\frac{1}{2}$  convexis, ultimo antice sensim descendente; umbilico  $\frac{2}{3}$  diametri æquante; apertura ampla, obliqua, angulato-ovali, intus lactea, peristomate simplici expansiusculo, superne acute angulato, breviter adnato, intus incrassato-labiato, margine columellari subtus recedente, dextro, superne antice arcuato. Operculo fulvo-corneo, solidiusculo, 7-spirato, convexiusculo, ad apicem foveato, intus concavo, margine externo sulco lato fere circumdato, anfractibus ad marginem carinatis, carina exteriore elevatiore.

Diam. major  $24\frac{1}{2}$ , minor 19, axis 8 mill.

Habitat in Insula Ceylon.

The keeled edges of the whorls of the somewhat thickened operculum form a striking character in this species, and afford indications of an approach to the operculum of *Pterocyclos*. From *C. Bairdi*, Pfr., the flat spire, the formation of the aperture, the colouring, absence of spiral striation, or angularity in the periphery, &c., sufficiently distinguish the species, which has some features in common with *C. loxostoma*, Pfr., of which also the operculum remains unknown. In some respects it resembles *C. Cratera*, B., which has, however, a double peristome and, like other allied species, a very different operculum.

Cheltenham, March 31, 1860.